

AMENDMENT

In the claims:

Please cancel previously added claims 23-49 and replace with claims 23-49 as follows:

23. (Four times amended) A method of producing a polypeptide comprising an amino acid sequence of

Gly Pro Glu Thr Leu Cys Gly Ala Glu Leu Val Asp Ala Leu Gln Phe Val Cys Gly Asp Arg Gly Phe Tyr Phe Asn Lys Pro Thr Gly Tyr Gly Ser Ser Ser Arg Arg Ala Pro Gln Thr Gly Ile Val Asp Glu Cys Cys Phe Arg Ser Cys Asp Leu Arg Arg Leu Glu Met Tyr Cys Ala Pro Leu Lys Pro Ala Lys Ser Ala; or

Ala Tyr Arg Pro Ser Glu Thr Leu Cys Gly Gly Glu Leu Val Asp Thr Leu Gln Phe Val Cys Gly Asp Arg Gly Phe Tyr Phe Ser Arg Pro Ala Ser Arg Val Ser Arg Arg Ser Arg Gly Ile Val Glu Glu Cys Cys Phe Arg Ser Cys Asp Leu Ala Leu Leu Glu Thr Tyr Cys Ala Thr Pro Ala Lys Ser Glu,

comprising expressing said polypeptide in a suitable host cell transformed with a polynucleotide encoding said polypeptide, wherein said polynucleotide comprises a nucleic acid sequence selected from the group consisting of:

(a) 5'-GGA CCG GAG ACG CTC TGC GGG GCT GAG CTG GTG GAT GCT CTT CAG TTC GTG TGT GGA GAC AGG GGC TTT TAT TTC AAC AAG CCC ACA GGG TAT GGC TCC AGC AGT CGG AGG GCG CCT CAG ACA GGT ATC GTG GAT GAG TGC TGC TTC CGG AGC TGT GAT CTA AGG AGG CTG GAG ATG TAT TGC GCA CCC CTC AAG CCT GCC AAG TCA GCT-3'; and

(b) 5'-GCT TAC CGC CCC AGT GAG ACC CTG TGC GGC GGG GAG CTG GTG GAC ACC CTC CAG TTC GTC TGT GGG GAC CGC GGC TTC TAC TTC AGC AGG CCC GCA AGC CGT GTG AGC CGT CGC AGC CGT GGC ATC GTT GAG GAG TGC TGT TTC CGC AGC TGT GAC CTG GCC CTC CTG GAG ACG TAC TGT GCT ACC CCC GCC AAG TCC GAG-3'.

24. (Four times amended) A method of producing a polypeptide comprising an amino acid sequence of

Gly Pro Glu Thr Leu Cys Gly Ala Glu Leu Val Asp Ala Leu Gln Phe Val Cys Gly Asp Arg Gly Phe Tyr Phe Asn Lys Pro Thr Gly Tyr Gly Ser Ser Ser Arg Arg Ala Pro Gln Thr Gly Ile Val Asp Glu Cys Cys Phe Arg Ser Cys Asp Leu Arg Arg Leu Glu Met Tyr Cys Ala Pro Leu Lys Pro Ala Lys Ser Ala; or

Ala Tyr Arg Pro Ser Glu Thr Leu Cys Gly Gly Glu Leu Val Asp Thr Leu Gln Phe Val Cys Gly Asp Arg Gly Phe Tyr Phe Ser Arg Pro Ala Ser Arg Val Ser Arg Arg Ser Arg Gly Ile Val Glu Glu Cys Cys Phe Arg Ser Cys Asp Leu Ala Leu Leu Glu Thr Tyr Cys Ala Thr Pro Ala Lys Ser Glu,

comprising introducing into a suitable host cell a nucleic acid molecule comprising a polynucleotide encoding said polypeptide, wherein said polynucleotide comprises a nucleic acid sequence selected from the group consisting of:

(a) 5'-GGA CCG GAG ACG CTC TGC GGG GCT GAG CTG GTG GAT GCT CTT CAG TTC GTG TGT GGA GAC AGG GGC TTT TAT TTC AAC AAG CCC ACA GGG TAT GGC TCC AGC AGT CGG AGG GCG CCT CAG ACA GGT ATC GTG GAT GAG TGC TGC TTC CGG AGC TGT GAT CTA AGG AGG CTG GAG ATG TAT TGC GCA CCC CTC AAG CCT GCC AAG TCA GCT-3'; and

(b) 5'-GCT TAC CGC CCC AGT GAG ACC CTG TGC GGC GGG GAG CTG GTG GAC ACC CTC CAG TTC GTC TGT GGG GAC CGC GGC TTC TAC TTC AGC AGG CCC GCA AGC CGT GTG AGC CGT CGC AGC CGT GGC ATC GTT GAG GAG TGC TGT TTC CGC AGC TGT GAC CTG GCC CTC CTG GAG ACG TAC TGT GCT ACC CCC GCC AAG TCC GAG-3'.

25. The method of claim 23 wherein said amino acid sequence is IGF-I and said nucleic acid sequence is sequence (a).

26. The method of claim 23 wherein said amino acid sequence is IGF-II and said nucleic acid sequence is sequence (b).

27. (Four times amended) A method of producing a polypeptide comprising the amino acid sequence of Fig. 1 in a suitable host cell transformed with a polynucleotide encoding said polypeptide, wherein said polynucleotide comprises the following nucleic acid sequence, wherein U can also be T:

5'-CUG GCG CUG UGC CUG CUC ACC UUC ACC AGC UCU GCC ACG GCU
GGA CCG GAG ACG CUC UGC GGG GCU GAG CUG GUG GAU GCU CUU CAG
UUC GUG UGU GGA GAC AGG GGC UUU UAU UUC AAC AAG CCC ACA GGG
UAU GGC UCC AGC AGU CGG AGG GCG CCU CAG ACA GGU AUC GUG GAU
GAG UGC UGC UUC CGG AGC UGU GAU CUA AGG AGG CUG GAG AUG UAU
UGC GCA CCC CUC AAG CCU GCC AAG UCA GCU CGC UCU GUC CGU GCC CAG
CGC CAC ACC GAC AUG CCC AAG ACC CAG AAG GAA GUA CAU UUG AAG AAC
GCA AGU AGA GGG AGU GCA GGA AAC AAG AAC UAC AGG AUG-3',

which method comprises expressing said polynucleotide in said host cell.

28. (Four times amended) A method of producing a polypeptide comprising the amino acid sequence of Fig. 2 in a suitable host cell transformed with a polynucleotide encoding said polypeptide, wherein said polynucleotide comprises the following nucleic acid sequence, wherein U can also be T:

5'-AUG GGA AUC CCA AUG GGG AAG UCG AUG CUG GUG CUU CUC ACC
UUC UUG GCC UUC GCC UCG UGC UGC AUU GCU GCU UAC CGC CCC AGU GAG
ACC CUG UGC GGC GGG GAG CUG GUG GAC ACC CUC CAG UUC GUC UGU
GGG GAC CGC GGC UUC UAC UUC AGC AGG CCC GCA AGC CGU GUG AGC CGU
CGC AGC CGU GGC AUC GUU GAG GAG UGC UGU UUC CGC AGC UGU GAC
CUG GCC CUC CUG GAG ACG UAC UGU GCU ACC CCC GCC AAG UCC GAG AGG
GAC GUG UCG ACC CCU CCG ACC GUG CUU CCG GAC AAC UUC CCC AGA UAC
CCC GUG GGC AAG UUC UUC CAA UAU GAC ACC UGG AAG CAG UCC ACC CAG
CGC CUG CGC AGG GGC CUG CCU GCC CUC CUG CGU GCC CGC CGG GGU CAC
GUG CUC GCC AAG GAG CUC GAG GCG UUC AGG GAG GCC AAA CGU CAC
CGU CCC CUG AUU GCU CUA CCC ACC CAA GAC CCC GCC CAC GGG GGC GCC
CCC CCA GAG AUG GCC AGC AAU CGG AAG UGA-3',

which method comprises expressing said polynucleotide in said host cell.

29. The method of claim 24 wherein said nucleic acid molecule is the plasmid phigfl.

30. The method of claim 24 wherein said nucleic acid molecule is the plasmid phigf2.

31. (Three times amended) A method of producing a polypeptide comprising the amino acid sequence of:

Gly Pro Glu Thr Leu Cys Gly Ala Glu Leu Val Asp Ala Leu Gln Phe Val Cys Gly Asp Arg Gly Phe Tyr Phe Asn Lys Pro Thr Gly Tyr Gly Ser Ser Ser Arg Arg Ala Pro Gln Thr Gly Ile Val Asp Glu Cys Cys Phe Arg Ser Cys Asp Leu Arg Arg Leu Glu Met Tyr Cys Ala Pro Leu Lys Pro Ala Lys Ser Ala; or

Ala Tyr Arg Pro Ser Glu Thr Leu Cys Gly Gly Glu Leu Val Asp Thr Leu Gln Phe Val Cys Gly Asp Arg Gly Phe Tyr Phe Ser Arg Pro Ala Ser Arg Val Ser Arg Arg Ser Arg Gly Ile Val Glu Glu Cys Cys Phe Arg Ser Cys Asp Leu Ala Leu Leu Glu Thr Tyr Cys Ala Thr Pro Ala Lys Ser Glu,

comprising expressing the heterologous DNA in the transformed cellular hosts of a composition of claim 10 or 11.

32. The method of producing a polypeptide according to claim 31 wherein said amino acid sequence is IGF-I and said nucleic acid sequence is sequence (a).

33. A method of producing a polypeptide according to claim 31 wherein said amino acid sequence is IGF-II and said nucleic acid sequence is sequence (b).

34. A method of producing a polypeptide according to claim 31 wherein said amino acid sequence is the amino acid sequence of Fig. 1 and said composition comprises the nucleic acid sequence:

5'-CTG GCG CTG TGC CTG CTC ACC TTC ACC AGC TCT GCC ACG GCT
GGA CCG GAG ACG CTC TGC GGG GCT GAG CTG GTG GAT GCT CTT CAG TTC
GTG TGT GGA GAC AGG GGC TTT TAT TTC AAC AAG CCC ACA GGG TAT GGC
TCC AGC AGT CGG AGG GCG CCT CAG ACA GGT ATC GTG GAT GAG TGC TGC
TTC CGG AGC TGT GAT CTA AGG AGG CTG GAG ATG TAT TGC GCA CCC CTC
AAG CCT GCC AAG TCA GCT CGC TCT GTC CGT GCC CAG CGC CAC ACC GAC
ATG CCC AAG ACC CAG AAG GAA GTA CAT TTG AAG AAC GCA AGT AGA GGG
AGT GCA GGA AAC AAG AAC TAC AGG ATG-3'.

35. A method of producing a polypeptide according to claim 31, wherein said amino acid sequence is the amino acid sequence of Fig. 2 and said composition comprises the nucleic acid sequence:

5'-ATG GGA ATC CCA ATG GGG AAG TCG ATG CTG GTG CTT CTC ACC
TTC TTG GCC TTC GCC TCG TGC TGC ATT GCT GCT TAC CGC CCC AGT GAG
ACC CTG TGC GGC GGG GAG CTG GTG GAC ACC CTC CAG TTC GTC TGT GGG
GAC CGC GGC TTC TAC TTC AGC AGG CCC GCA AGC CGT GTG AGC CGT CGC
AGC CGT GGC ATC GTT GAG GAG TGC TGT TTC CGC AGC TGT GAC CTG GCC
CTC CTG GAG ACG TAC TGT GCT ACC CCC GCC AAG TCC GAG AGG GAC GTG
TCG ACC CCT CCG ACC GTG CTT CCG GAC AAC TTC CCC AGA TAC CCC GTG
GGC AAG TTC TTC CAA TAT GAC ACC TGG AAG CAG TCC ACC CAG CGC CTG
CGC AGG GGC CTG CCT GCC CTC CTG CGT GCC CGC CGG GGT CAC GTG CTC
GCC AAG GAG CTC GAG GCG TTC AGG GAG GCC AAA CGT CAC CGT CCC CTG
ATT GCT CTA CCC ACC CAA GAC CCC GCC CAC GGG GGC GCC CCC CCA GAG
ATG GCC AGC AAT CGG AAG TGA-3'.

36. The method of claim 31 wherein said heterologous DNA molecule is located on a plasmid that replicates in said host cells.

37. The method of claim 31 wherein said transformed cellular hosts are yeast.

38. The method of claim 31 wherein said transformed cellular hosts are *E. coli*.
39. The method of claim 31 wherein said transformed cellular hosts are *B. subtilis*.
40. The method of claim 31 wherein said transformed cellular hosts are *E. coli* strain HB 101 (phigf1).
41. The method of claim 31 wherein said transformed cellular hosts are *E. coli* strain HB 101 (phigf2).
42. A method according to claim 23 wherein the polypeptide is IGF-I and the polynucleotide sequence is sequence (a).
43. A method according to claim 23 wherein the polypeptide is IGF-II and the polynucleotide sequence is sequence (b).
44. (Two times amended) A vector comprising a nucleic acid sequence selected from the group consisting of the following nucleic acid sequences:
- (a) 5'-GGA CCG GAG ACG CUC UGC GGG GCU GAG CUG GUG GAU GCU CUU CAG UUC GUG UGU GGA GAC AGG GGC UUU UAU UUC AAC AAG CCC ACA GGG UAU GGC UCC AGC AGU CGG AGG GCG CCU CAG ACA GGU AUC GUG GAU GAG UGC UGC UUC CGG AGC UGU GAU CUA AGG AGG CUG GAG AUG UAU UGC GCA CCC CUC AAG CCU GCC AAG UCA GCU-3', wherein U can also be T;
- (b) 5'-GCU UAC CGC CCC AGU GAG ACC CUG UGC GGC GGG GAG CUG GUG GAC ACC CUC CAG UUC GUC UGU GGG GAC CGC GGC UUC UAC UUC AGC AGG CCC GCA AGC CGU GUG AGC CGU CGC AGC CGU GGC AUC GUU GAG

GAG UGC UGU UUC CGC AGC UGU GAC CUG GCC CUC CUG GAG ACG UAC UGU GCU ACC CCC GCC AAG UCC GAG-3', wherein U can also be T;

(c) a nucleic acid sequence complementary to (a) or (b);

(d) a fragment of (a) or (b) that is at least 18 bases in length; and

(e) a fragment of (c) that is at least 18 bases in length.

45. A vector according to claim 44 wherein said nucleic acid sequence is nucleic acid sequence (a).

46. (Three times amended) An expression vector comprising a polynucleotide encoding a polypeptide, wherein said polypeptide comprises an amino acid sequence of:

Gly Pro Glu Thr Leu Cys Gly Ala Glu Leu Val Asp Ala Leu Gln Phe Val Cys Gly Asp Arg Gly Phe Tyr Phe Asn Lys Pro Thr Gly Tyr Gly Ser Ser Ser Arg Arg Ala Pro Gln Thr Gly Ile Val Asp Glu Cys Cys Phe Arg Ser Cys Asp Leu Arg Arg Leu Glu Met Tyr Cys Ala Pro Leu Lys Pro Ala Lys Ser Ala;

Ala Tyr Arg Pro Ser Glu Thr Leu Cys Gly Gly Glu Leu Val Asp Thr Leu Gln Phe Val Cys Gly Asp Arg Gly Phe Tyr Phe Ser Arg Pro Ala Ser Arg Val Ser Arg Arg Ser Arg Gly Ile Val Glu Glu Cys Cys Phe Arg Ser Cys Asp Leu Ala Leu Leu Glu Thr Tyr Cys Ala Thr Pro Ala Lys Ser Glu, or

fragment thereof,

wherein said amino acid sequence, or fragment thereof, is encoded by a nucleic acid sequence selected from the group consisting of the following nucleic acid sequences:

(a) 5'-GGA CCG GAG ACG CUC UGC GGG GCU GAG CUG GUG GAU GCU CUU CAG UUC GUG UGU GGA GAC AGG GGC UUU UAU UUC AAC AAG CCC ACA GGG UAU GGC UCC AGC AGU CGG AGG GCG CCU CAG ACA GGU AUC GUG GAU GAG UGC UGC UUC CGG AGC UGU GAU CUA AGG AGG CUG GAG AUG UAU UGC GCA CCC CUC AAG CCU GCC AAG UCA GCU-3', wherein U can also be T;

(b) 5'-GCU UAC CGC CCC AGU GAG ACC CUG UGC GGC GGG GAG CUG GUG GAC ACC CUC CAG UUC GUC UGU GGG GAC CGC GGC UUC UAC UUC AGC AGG CCC GCA AGC CGU GUG AGC CGU CGC AGC CGU GGC AUC GUU GAG GAG UGC UGU UUC CGC AGC UGU GAC CUG GCC CUC CUG GAG ACG UAC UGU GCU ACC CCC GCC AAG UCC GAG-3', wherein U can also be T; and

(c) a fragment of (a) or (b) that is at least 18 bases in length.

47. An expression vector according to claim 46, wherein said amino acid sequence is the sequence of Fig. 1.

48. An expression vector according to claim 46, wherein said amino acid sequence is the sequence of Fig.2.

49. A composition according to claim 1 wherein said nucleic acid molecules comprise a nucleic acid sequence selected from the group consisting of (a), (b), and (d).